

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions)	GN Docket No. 12-268
)	
Office of Engineering and Technology Releases and Seeks Comment on Updated OET-69 Software)	ET Docket No. 13-26
)	
Office of Engineering and Technology Seeks to Supplement the Incentive Auction Proceeding Record Regarding Potential Interference Between Broadcast Television and Wireless Services)	ET Docket No. 14-14
)	

**OPPOSITION AND REPLY OF CTIA – THE WIRELESS ASSOCIATION® TO
PETITIONS FOR RECONSIDERATION**

I. INTRODUCTION AND SUMMARY

CTIA – The Wireless Association® (“CTIA”) hereby responds to two Petitions for Reconsideration of the Commission’s Second Report and Order (“*ISIX Report and Order*”) addressing potential interference between broadcast and wireless services in the 600 MHz band.¹ The Commission’s adoption of the *ISIX Report and Order* was a necessary step in accommodating a limited degree of market variability in the post-auction 600 MHz band. CTIA supports the adoption of clear and easily-followed procedures for identifying and mitigating inter-service interference. CTIA also strongly supports policies that provide clarity to wireless

¹ *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Office of Engineering and Technology Releases and Seeks Comment on Updated OET-69 Software, Office of Engineering and Technology Seeks to Supplement the Incentive Auction Proceeding Record Regarding Potential Interference Between Broadcast Television and Wireless Services, Second Report and Order and Further Notice of Proposed Rulemaking, FCC 14-157 (Oct. 16, 2014) (“ISIX Order and FNPRM”).*

carriers and broadcasters impacted by the broadcast television incentive auction while maximizing the amount of spectrum made available for new wireless services. In furtherance of these goals, CTIA asks that the Commission take the following actions in response to the Petitions for Reconsideration filed in this proceeding:

- **The Commission should grant Sprint Corporation’s (“Sprint”) request that the Commission use the F(50,10) statistical measure when calculating the potential interference to 600 MHz wireless operations from co- and adjacent-channel television stations.** This statistical measure is more appropriate than the F(50,50) statistical measure adopted by the Commission in the *ISIX Report and Order*. The F(50,10) statistical measure will enable wireless carriers to bid on licenses with greater confidence and will ensure parity in the interference protection obligations of wireless carriers and broadcasters. Notably, broadcasters also support the use of this statistical measure.
- **The Commission should reject the National Association of Broadcasters’ (“NAB”) call to abandon the inter-service interference methodology on the grounds that it is too complicated.** CTIA supports limited market variation to the extent necessary to promote the overall goals of the incentive auction, and the inter-service interference methodology adopted by the Commission is the best available means of addressing this highly complicated issue. The Commission should also once again reject the use of a fixed distance-based approach to address inter-service interference.

By taking these steps, the Commission will provide necessary certainty to affected stakeholders and help to ensure success in both the incentive auction and the post-auction 600 MHz ecosystem.

II. THE COMMISSION SHOULD USE THE F(50,10) STATISTICAL MEASURE WHEN CALCULATING THE POTENTIAL INTERFERENCE TO 600 MHZ WIRELESS OPERATIONS FROM CO- AND ADJACENT-CHANNEL TELEVISION STATIONS.

To inform forward auction bidders and protect 600 MHz licensees from interference, the Commission should use the $F(50,10)^2$ statistical measure to calculate potential interference to

² The F(50,50) statistical measure for field strength prediction assumes that an interfering signal will be strong enough to interfere in 50 percent of the locations 50 percent of the time. The F(50,10) measure for field strength prediction assumes that an interfering signal will be strong enough to interfere in 50 percent of the locations 10 percent of the time.

600 MHz wireless operations. To this end, CTIA supports the Petition for Reconsideration filed by Sprint, which explains that such action is necessary to “harness the economics of demand for spectrum in order to allow market forces to determine its highest and best use.”³ Use of the F(50,10) statistical measure – rather than the F(50,50) statistical measure adopted by the Commission⁴ – will provide forward auction bidders with considerably more useful information regarding license impairments. For this reason, CTIA agrees with broadcasters who also conclude that use of the F(50,50) statistical measure in this context is inappropriate.

Use of the F(50,10) statistical measure is the most appropriate means of calculating potential interference to 600 MHz wireless operations. In particular, this statistical measure will better inform forward auction bidders regarding the limitations on their 600 MHz licensees, and will more adequately protect 600 MHz licensees. Sprint has submitted data showing that the difference between predicted interference levels using F(50,50) and F(50,10) is significant.⁵ While the two statistical measures yield similar results at short distances, at greater distances the predicted signal levels can differ by more than 10 dB.⁶ As Sprint notes, the Commission’s current approach will inform bidders only as to the predicted level of impairment in a block, not

³ Petition for Reconsideration of Sprint Corporation, GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14, at 2 (Jan. 22, 2015) (“Sprint Petition”) quoting *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, ¶ 2 (2014).

⁴ In the *ISIX Report and Order*, the Commission adopted interference analysis procedures for analyzing the level of interference that could occur from remaining TV operations to uplink and downlink wireless operations. Interfering television signal limits are typically based on F(50,10) statistical measures to ensure that interference occurs no more than 10 percent of the time. Television protected service contours are typically based on either the F(50,50) or F(50,90) statistical measures.

⁵ Sprint Petition at 8-12.

⁶ *Id.* at 9.

the actual source and location of the impairment.⁷ Thus, if the F(50,50) statistical measure is utilized, wireless providers will not be able to accurately determine the effects of interference from broadcast operations. By contrast, bidders will benefit much more from calculating interference based on the F(50,10) statistical measure.⁸ The F(50,10) statistical measure is a more accurate reflection of the real-world usability of a spectrum block and the costs associated with addressing impairments.⁹ CTIA therefore agrees with Sprint that failure to use the F(50,10) metric could undermine valuation efforts, engender uncertainty, and threaten bidder confidence regarding the licenses available at auction.¹⁰

Notably, adoption of the F(50,10) statistical measure has the support of the broadcast industry. In particular, NAB asserts that the F(50,50) statistical measure “makes . . . predictions less useful and may depress bidding in the forward auction.”¹¹ Further, “[a]djusting technical parameters that understate potential interference and do not reflect operational realities would increase the odds that a bidder in the forward auction winning an allegedly ‘unimpaired’ license will actually be able to operate that license in accordance with applicable Commission rules.”¹² As both wireless and broadcast stakeholders support the F(50,10) statistical measure, CTIA urges the Commission to reconsider its decision to apply the F(50,50) statistical measure for calculation of interference to wireless operations from co- and adjacent-channel broadcasters.

⁷ *Id.* at 11.

⁸ *Id.*

⁹ *Id.* at 12.

¹⁰ *Id.* at 15.

¹¹ Petition for Reconsideration of the National Association of Broadcasters, GN Docket No. 12-268, ET Docket Nos. 13-26 and 14-14, at 9 (Jan. 22, 2015) (“NAB Petition”).

¹² *Id.*

III. THE ISIX METHODOLOGY ADOPTED BY THE COMMISSION IS THE APPROPRIATE MEANS TO ADDRESS INTER-SERVICE INTERFERENCE.

The Commission should deny NAB’s Petition for Reconsideration to the extent that it advocates abandonment of the Commission’s inter-service interference methodology in favor of a fixed distance-based approach. While CTIA supports limited market variation to the extent necessary to promote the overall goals of the incentive auction, it believes that the methodology adopted by the Commission is a good one, and that mitigation of inter-service interference is key to promoting a productive 600 MHz frequency environment post-repacking.

The ISIX methodology adopted by the Commission is the best available means of addressing a highly challenging post-repacking interference environment. In its Petition for Reconsideration, NAB has asked the Commission to reconsider its inter-service interference methodology, arguing that a fixed distance-based approach is more appropriate.¹³ NAB opposes use of the inter-service interference methodology in part because it is “unnecessarily complex” and “creates needless uncertainty and risk for bidders in the forward auction.”¹⁴ CTIA, however, agrees with the Commission that while the methodology it has adopted is complicated, “the added complexity . . . is justified by its benefits.”¹⁵ While CTIA believes that market-to-market variation – and by extension the need for the inter-service interference methodology – should be kept to a minimum, there are strong benefits to accommodating some minimal market variability. By facilitating this limited variation, the Commission will enable a greater amount of spectrum to be put to use to meet the surging demand for wireless services. The overall framework adopted by the Commission is a good one, and CTIA believes that by following the approach

¹³ *Id.* at 7.

¹⁴ *Id.* at 2.

¹⁵ *ISIX Order and FNPRM* at ¶ 41.

adopted in the Report and Order, the Commission will take an important step toward promoting a harmonious and efficient 600 MHz band plan.

NAB's petition relies upon arguments that have already been considered and rejected by the Commission, and as such the Commission should not reconsider its decision to not adopt the fixed distance-based approach.¹⁶ As the Commission noted in the *ISIX Report and Order*, the fixed distance-based approach would create unreasonably large impairment zones and exclude from the forward auction spectrum that could otherwise be offered for wireless services if impairments were assessed more accurately.¹⁷ Meanwhile, "more accurate predictions and more granular data will allow for more informed decisions, both for the Commission in determining whether to auction certain licenses and for auction participants in making bidding decisions."¹⁸ NAB, meanwhile, has offered no new argument in support of its claim that a fixed distance-based approach is the best means of addressing inter-service interference. The Commission acted correctly when adopting its inter-service interference methodology, and the Commission should deny NAB's request to adopt a fixed distance-based approach.

¹⁶ See 47 C.F.R. § 1.429(1)(3). Compare NAB Petition at 7 ("The Commission should revisit this approach, beginning with the ISIX methodology adopted to make auction predictions. We continue to believe that using fixed separation distances, where distances are representative of potential interference between DTV and wireless service, would be far easier to implement and will not sacrifice meaningful spectral efficiency.") with *ISIX Report and Order* at ¶ 41 ("The Joint Broadcasters also argue that a fixed distance-based approach – for Case 1 and Case 2 – would be 'far easier to implement and will not sacrifice meaningful spectral efficiency.' Although we recognize that the ISIX Methodology we adopt may be more complex than a fixed distance-based approach, we conclude that the added complexity of our approach is justified by its benefits. The ISIX Methodology's granularity, tailored approach to different interference scenarios, and ability to account for factors that will mitigate interference in individual cases will generally lead to more accurate interference predictions.").

¹⁷ *ISIX Report and Order* at ¶ 39.

¹⁸ *Id.* at ¶ 41.

IV. CONCLUSION

CTIA commends the Commission's efforts to accommodate limited market variation in the 600 MHz band plan, as this is an important step toward making more spectrum available for mobile services. To best promote an interference-free environment in the 600 MHz band post-auction, the Commission should adopt the statistical measure that will most accurately calculate potential interference and have the greatest utility to potential bidders. Further, the Commission should reject calls to abandon its inter-service interference methodology in favor of an oversimplified fixed distance-based approach that would limit the Commission's ability to make spectrum available for new wireless uses.

Respectfully submitted,

By: /s/ Krista L. Witanowski

Krista L. Witanowski
Assistant Vice President, Regulatory Affairs

Thomas C. Power
Senior Vice President and General Counsel

Scott K. Bergmann
Vice President, Regulatory Affairs

CTIA – The Wireless Association®
1400 16th Street, NW, Suite 600
Washington, D.C. 20036
(202) 785-0081

Dated: February 26, 2015

CERTIFICATE OF SERVICE

I hereby certify that on February 26, 2015, I caused a true and correct copy of the foregoing to be served by first-class mail on the following:

Donald G. Everist
Cohen, Dippell and Everist, P.C.
1420 N Street, NW
Suite One
Washington, DC 20005

Rick Kaplan
National Association of Broadcasters
1771 N Street, NW
Washington, DC 20036

Lawrence R. Krevor
Sprint Corporation
900 Seventh Street, NW
Suite 700
Washington, DC 20001

By: /s/ Patricia Destajo

Patricia Destajo